Was there ever a Single Grave culture in East Denmark?

Traditions and transformations in the 3rd millennium BC

Iversen, Rune

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THE 3RD MILLENNIUM BC IN EUROPE

Proceedings of the International Workshop "Socio-Environmental Dynamics over the Last 12,000 Years: The Creation of Landscapes III (15th – 18th April 2013)" in Kiel

edited by: Martin Furholt, Ralph Großmann, Marzena Szmyt

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VORWORT DER HERAUSGEBER

Die Reihe „Universitätsforschungen zur prähistorischen Archäologie“ soll einem in der jüngeren Vergangenheit entstandenen Bedürfnis Rechnung tragen, nämlich Examensarbeiten und andere Forschungsleistungen vornehmlich jüngerer Wissenschaftler in die Öffentlichkeit zu tragen. Die etablierten Reihen und Zeitschriften des Faches reichen längst nicht mehr aus, die vorhandenen Manuskripte aufzunehmen. Die Universitäten sind deshalb aufgerufen, Abhilfe zu schaffen. Einige von ihnen haben mit den ihnen zur Verfügung stehenden Mitteln unter zumeist tatkräftigem Handanlegen der Autoren die vorliegende Reihe begründet. Thematisch soll darin die ganze Breite des Faches vom Paläolithikum bis zur Archäologie der Neuzeit ihren Platz finden.

Ursprünglich hatten sich fünf Universitätsinstitute in Deutschland zur Herausgabe der Reihe zusammengefunden, der Kreis ist inzwischen größer geworden. Er lädt alle interessierten Professoren und Dozenten ein, als Mitherausgeber tätig zu werden und Arbeiten aus ihrem Bereich der Reihe zukommen zu lassen. Für die einzelnen Bände zeichnen jeweils die Autoren und Institute ihrer Herkunft, die im Titel deutlich gekennzeichnet sind, verantwortlich. Sie erstellen eine druckfertig gestaltete Datei (PDF). Bei gleicher Anordnung des Umschlages haben die verschiedenen beteiligten Universitäten jeweils eine spezifische Farbe. Finanzierung und Druck erfolgen entweder durch sie selbst oder durch den Verlag Dr. Rudolf Habelt GmbH, der in jedem Fall den Vertrieb der Bände sichert.

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PREFACE OF THE SERIES EDITOR

Research on "Landscape" as a product of both environmental conditions and the creation of social space is one of the most important issues in coming to terms with current problems. Past "Human Development in Landscapes" is the core topic of the Kiel Graduate School (GSHDL), which has been working within the framework of the Excellence Initiative since 2007. As the visible result of socio-environmental research, we decided to create this new series under the same name, providing the possibility to publish relevant themes.

This volume is a product of a session from the international conference "Socio-Environmental Dynamics over the Last 12,000 Years: The Creation of Landscapes III" in 2013. During the course of the session on "Transitional Landscapes? Spatial Patterns, Standardised Burials and Intensified Communication in the 3rd Millennium BC in Europe", the organizers and editors made enormous progress with respect to analyses and interpretations of the 3rd millennium BC.

For further publications on socio-environmental research we invite other scientists and scholars to publish their results in the HDL (Human Development in Landscapes) series.

In addition to the editors of the volume, the Graduate School heartily thanks Janine Cordts and Eileen Küçükaraca, Kiel for technical and scientific editing work. Without their efforts the book would not have been possible.

Johannes Müller

THE KIEL GRADUATE SCHOOL "HUMAN DEVELOPMENT IN LANDSCAPES"

In order to gain an understanding of human development, an accurate description of the interactions between mankind and both physical and perceived environments is required. At Kiel University, this is exemplified by numerous graduate projects in the natural sciences that have been and are tackling archaeological problems, while, at the same time, cultural studies and archaeology provide important evidence and directions for scientific analysis.

Intensified cross-linkages between academic disciplines, graduate researchers' growing needs for analytical equipment and an efficient infrastructure, as well as an increasingly internationalized research community made it necessary to set up a multi-disciplinary Graduate School (GS). This school provides graduate students with access to new research and diverse communication structures, enabling them to conduct innovative investigations. The GS is part of the Excellence Initiative of the Federal German Government.

We define landscape as a dynamic space of social, cultural, and ecological significance, which develops interactively with the human societies occupying it. Accordingly, we outline a GS concept that merges information from numerous fields, such as molecular biology and archaeology, geoinformatics and art history, geophysics and isotope research, ancient languages and palaeoecology, and written/oral traditions and palaeoclimate, in order to study and understand this interactive development. The dynamics of human development – and thus of landscape and living space – are captured by a complex interplay of diverse factors (biological traits of social groups, conditions of the natural environment, social constants and their material representations), which are covered by the joint research of our disciplines. The results of this research yield new impulses for current landscape and cultural management.

THE SCIENTIFIC CONCEPT

The global theme of human development within cultural and natural environments is associated with the detection of cross-linkages between different factors: the influence of man on nature and vice versa. At present, the natural change of environmental conditions must be investigated at more precise timescales, while human impact on the environment needs to be understood. The creation of cultural environments over time and space amplifies the meaning of landscape: Apart from the impact of natural conditions on individual (health and genetics), ecological (soil, climate and vegetation) and technological (wind/waterpower and natural resources) developments, social constants (social hierarchies and ideologies) also play a decisive role in the formation of landscapes.

Social environments within this concept of landscapes are not only reflected by material remains but also by the spatial imprints of mobility and sustainability. The development of social space under specific ecological conditions is linked to the ideological systems which keep societies, for economic reasons or ritual purposes, together.

In this respect, the study of landscapes does not only concern environmental, demographic, and social reconstructions but also the ideological changes regarding "landscapes", i.e. the conceptions that individuals and societies have concerning "nature". The appropriation of landscapes by societies and their ambigu-

ous symbolisms enable diverse reconstructions of the environments of different social groups and cultures.

Highly dynamic spatio-temporal processes underlie the data collected by numerous disciplines of the Graduate School, whereby an understanding of these processes requires expertise in palaeoclimatic, palaeoecological, palaeodemographic and cultural research. Although the processes involved are of global character and apply to the entire span of human history, individual case studies emerging from the Graduate School concentrate primarily on the Holocene, which is the key era of interactions between humans and landscapes. These investigations focus mainly on Europe and adjacent regions.

THREE CLUSTERS AND THREE PLATFORMS OF RESEARCH

According to the underlying scientific concept, a breakdown of the relationship between cultural and natural environments into three general themes, which serve as the main research areas of the GS, is essential:

- **Society and Reflection**: How did human groups conceive their natural and cultural environments and thus their landscapes? What means were employed by societies to structure these landscapes?
- **Social Space and Landscape:** How did demographic and technical changes influence the formation of social groups and landscapes? What kind of genetic differentiation is visible in animal and human groups after the pre-shaping of environmental conditions?
- **Adaptation and Innovation:** How did environmental conditions change and how was social space re-organised within the new local, regional, and global conditions? How did landscapes evolve after the iterative processes of the interaction between nature and society and how can they be characterized?

As the universally relevant factors that underlie the concept of landscape – defined as social space and natural environment bearing the activities of human groups – require the thematic cross-linkage of several disciplines, the PhD research proposed within the clusters is centered on highly interdisciplinary subthemes. Thus, this research is supported by three organizational platforms – the Communication Platform, the Technical Platform and the Humanities Platform. They provide a harmonization of scientific cultures and didactic aid, offer access to numerous tools and expertise in analytical methods and assist graduates with the acquisition of sources such as text and image databases.

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Martin Furholt

INTRODUCTION: NEW PERSPECTIVES ON THE 3RD MILLENNIUM

A set of narratives dominates the discussions on the 3rd millennium BC in Central and Northern Europe. They are linked to several especially marked or emblematic features of the 3rd millennium archaeological record, namely the 1) extraordinary spatial extent of archaeological units of classification (or "archaeological cultures"), in particular the Corded Ware and Bell Beakers, 2) extraordinary homogeneity of material culture within these large units, 3) widespread changes visible in the burial customs, featuring gendered individuals, again especially visible in the context of Corded Ware and Bell Beakers, 4) marked changes in settlement patterns, and 5) a perceived continuity of Corded Ware and Bell Beaker features into the Early Bronze Age. Narratives connected to these observations have been created from different directions, and with different intentions and nuances, but one could sum them up as follows: The changes in the archaeological record leading to the formation of Corded Ware and Bell Beakers 1) are the results of or indicate a fundamental reorganisation of society, 2) are caused by a massive migration from the east, in the course of which 3) a new language (Indo-European), 4) new forms of social relations (more hierarchic and patriarchic, as well as widened networks), 5) a new economic basis (pastoralism, metallurgy), and 6) new ideological systems (highlighted individual and gender-roles) are established. This, so the narrative continues, is 7) a prelude to the European Bronze Age. The workshop session published in this volume, "Transitional Landscapes? – Spatial Patterns, Standardised Burials and Intensified Communication in the 3rd Millennium BC in Europe" was held in the spring of 2013. Its main idea was to bring together those colleagues working in different regions and on different aspects of the 3rd millennium BC in Europe in order to evaluate the prevailing overall narratives connected to the time period from different local and regional perspectives. The motivation to do so stemmed from the view that these narratives brush over an amount of local, regional and temporal variation that would, if acknowledged, seriously question their accordance with the archaeological record (see Furholt 2014; and Furholt this volume). This tension between large-scale narratives and regional and local perspectives have been further fuelled by exciting new discoveries by studies of ancient DNA in Neolithic individuals that are mainly perceived as supporting the outlined narratives (Brandt et al. 2013; Lazaridis 2014; Haak et al. 2015; Allentoft et al. 2015; Mathieson et al. 2015).

The new aDNA evidence has demonstrated that it is possible to identify periods and regions with differential human mobilities, including strong impacts of processes of migration and even main directions in which movements took place. This has obviously stirred up a community that was more or less sceptical about migration as a factor to conceive European Prehistory, while others, who have tried to re-vitalise migration (e.g. Kristiansen 1989; Anthony 1990; Burmeister 2000; Prien 2005) feel reassured.

However, one main reason for the abandonment of migration as a concept in archaeology was the crudeness of its conceptualisation and application in archaeology. It often constructed an artificial and unrealistic opposition between "migration" (meaning the stereotypic single-event mass migration) and "not-a-migration", or "diffusion", and in applications to archaeological material it built on long-disproved notions which equated archaeological cultures with specific social groups (as criti-

cised by Brather 2004; Brather/Wotzka 2006). These hypothetical social groups are very often portrayed as homogeneous social units with a collective agency, and thus the expansion or movement of material culture traits appear to be the result of mass migrations (see Chapman/Dolukhanov 1992; Furholt 2008). Often the link between migration theory and its archaeological application is the main problem. Even if pioneers like D. Anthony (1990) or S. Burmeister (2000) have formulated elaborated models of migration as complex and highly variable processes, the mainstream migrationist argument falls back to a Kossinna-like manner of taking the appearance of similar material culture in two regions as an indication for a single-event mass migration of people from one region to the other, while their counterparts (including, for example, Furholt 2003) would likewise reject migration and instead talk about "communication" or "networks". The uneasiness many archaeologists experience with respect to these new aDNA studies and their results do, I would argue, stem from this perceived connotation of archaeological cultures as "peoples, and "migration" with a stereotypic "single-event mass migration"-scenario, which seems to be re-vitalised, and is reminiscent of old-school Culture History in the style of Gustaf Kossinna.

However, if we – as we should – reintegrate migration as a social phenomenon into our understanding of 3rd millennium Europe, it is even more important to explicitly elaborate our concepts. For example, besides making explicit the differential and complex social phenomena subsumed under the term "migration", it seems urgent to point out that especially large archaeological units, like Corded Ware, are artificial archaeological units of classification, referring to set(s) of things and practices which still contain a considerable degree of variability, and cannot be equalled with a specific social group, nor does it represent a total social phenomenon that could be explained by a single historical event or factor (see Furholt this volume). In order to understand the social phenomena connected to the fascinating new data provided by molecular biologists, the discussion of the archaeological evidence from local and regional contexts, as presented in this volume, is as crucial as it has ever been. Maybe it is now even more important for our view on the 3rd millennium BC, since the long shadow of G. Kossinna and totalitarian ethno-essentialism in archaeology seems to gain ground again as a probably unintended consequence of the "aDNA revolution" (see also Müller 2013).

THE PAPERS IN THIS VOLUME

As archaeologists interested in social processes and histories in their variability and multiplicity, we should strengthen a more differentiated account on prehistoric societies, even if they are more complicated to communicate to the public. Moreover, within academic discourse, very different approaches, concepts and models should be discussed and weighed against each other. The papers in this volume are anything but homogeneous. It was our explicit intention to assemble a spectrum of the international research on 3rd millennium Central and Northern Europe without setting a unified agenda. Looking at the list of papers, this spectrum includes colleagues from the United Kingdom, Denmark, the Netherlands, Germany, Poland, and the Czech Republic. But within this spectrum, the scope is wide. There is a group of papers that deals with a broader regional and temporal scale, "the bigger picture" as one might call it. The perspectives taken could not be more diverse. Heyd discusses the long-term processes of trans-regional-interaction between the steppe and Southeastern and Central Europe, starting in the 5th millennium BC and extending into the 3rd millennium. For the course of this long-term process, he discusses the role of population movements, or "infiltration", in the context of changing subsistence and economic patterns, social structures and interaction networks. Although he highlights the role of "steppe pastoralism" for the 3rd millennium transformations in Europe, the connected social phenomena are described as much more complicated than a "single-event mass migration".

F. Klimscha uses flint axe technology as an indicator for 4th millennium networks of inter-

action, which he then connects to the spread of technological innovations such as animal traction and wheeled vehicles. He discusses several mechanisms of interaction and discusses the role of individual mobilities in the process. J. Beran proposes an explicitly provocative model of the 3rd millennium as a time of warfare and political struggle between population subgroups, inspired by historical records from African pre-colonial history. Clearly opposing most mainstream arguments, he applies an equation of specific traits of material culture with specific population groups and in this way evokes a scenario of Funnel Beakers, Globular Amphorae and Corded Ware as empires and militant warlords, including the violent suppression of people and revolutions.

M. Furholt, by contrast, stresses the variability within these archaeological units and argues for a bottom-up perspective in regional contexts in which those elements of material culture are integrated. He concentrates on Corded Ware and explores the different practices associated with Corded Ware material. He points to the tension between trans-regional trends and local adaptation, and in this context explores the social consequences of strong trans-spatial ties in local communities.

M. Szmyt also advocates a multi-scalar approach to the large-scale archaeological phenomena. She argues for a perspective that rates social practices and their local material manifestations higher than the study of the typological similarities and applies this approach to peripheral Globular Amphora groups. N. Johannsen et al. present new research about the Northern Jutland stone heap graves, which recently have been identified as a local expression of the trans-regional burial custom of cattle burials (see also Heyd this volume, and Szmyt this volume) and highlight, like Klimscha (this volume) the role that technological innovations, such as animal traction and the wagon, played in the 3rd millennium transformation in Europe. R. Grossmann studies Corded Ware and Bell Beaker burial customs in Central and Western Germany, and criticizes their artificial separation due to different pottery styles. He points to the amount of overlap between the two supposed identity groups and suggests the existence of hybrid identities, given of course that indeed those clear-cut Corded Ware or Bell Beaker identities were a reality among the local groups in question in the first place.

A similarly indistinct picture is reported by U. Rasmussen, who discusses the coastal settlement site of Gaasemosen in Eastern Jutland, where a "Funnel Beaker Community", living on a mixed economy of hunting, fishing and animal husbandry, slowly takes up elements of the Single Grave Culture/Corded Ware. This is a situation resembling the overall trend on the Danish Isles, where R. Iversen portrays the 3rd millennium as a time of cultural heterogeneity, encompassing late Funnel Beaker and Pitted Ware elements, gradually taking up elements derived from Single Grave and Battle Axe traditions in surrounding areas. J.P. Kleijne et al. present their analyses of the material from two settlement sites in the northern Dutch tidal area, Keinsmerbrug and Mienakker, again demonstrating how trans-regional elements of the Corded Ware, here pottery, are gradually taken up and integrated into locally rather stable contexts. In another local case study from Southeastern Poland, A. Pelisiak makes a point for a growing role of animal husbandry during the transition from Funnel Beaker to Corded Ware periods, which he mainly deduces from the changing spatial distribution of sites in the landscape.

Two papers deal with social roles performed in burial rituals of the Czech Republic. J. Westermann highlights the role of bowls as a potential marker of identities that have been commonly overlooked in favour of more "emblematic" types of finds. This argument corresponds well to the diversity of social roles identified by J. Kolár in his thorough analysis of burial goods and social roles in Moravian Corded Ware cemeteries and by Furholt's investigations of the diverse and changing social significance of different components of the Corded Ware package.

The papers of this volume highlight three aspects of 3rd millennium archaeological research. First, large scale phenomena, such as Yamnaya, Globular Amphorae and Corded Ware, are much less clear-cut, bounded archaeological phenomena than normally suggested and much more integrated into overall, long-term trends. Second, the local contexts studied here demonstrate cases, in which the elements

of material culture assigned to units like "Corded Ware", are, despite their formal adherence to overall trends, used in quite diverse ways, fitting into local traditions. Thirdly, it could be shown that local manifestations of Corded Ware or Bell Beaker material culture or burial rites, be it in the Dutch marchlands, on the Danish Isles, on the Central German Uplands, or on fertile Bohemian soils, are much less defined or invariable than textbook knowledge would usually have it. As we have learned from the aDNA studies discussed above, in order to understand this complex archaeological record – this interplay of overall trends and locally variable interpretations – we need to take into account a large degree of mobility and an important role of Eastern European migrants. Moreover, it also becomes very clear that simple, one-dimensional models, like a "massive migration", are totally inadequate to gain a better understanding of developments in the regarded time frame. The aDNA revolution has created and will continue to create massive progress in our ability to understand social and cultural developments in Central and Northern Europe in the 3rd millennium, but considerably new, and more detailed models of social interaction also need to be developed, focusing on individual and collective mobility on local, regional and trans-regional scales that are in accordance with the archaeological record in all its complexity. Hopefully, the papers assembled in this volume will be helpful for future dialogues on these matters.

Martin Furholt, February 2016

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2 REGIONAL STUDIES

Rune Iversen

WAS THERE EVER A SINGLE GRAVE CULTURE IN EAST DENMARK? TRADITIONS AND TRANSFORMATIONS IN THE 3RD MILLENNIUM BC

ABSTRACT

The 3rd millennium BC in South Scandinavia was characterised by a sizable cultural heterogeneity covering differences in the use of material culture, burial practices and subsistence economic strategies. In the first half of the 3rd millennium BC, four archaeologically-defined cultural groups coexisted for at least a couple of hundred years: the late Funnel Beaker culture (TRB), the forager-oriented Pitted Ware culture and the Single Grave and Battle Axe cultures, the last two belonging to the overall Corded Ware complex. As the Funnel Beaker culture ceased, East Denmark entered an insignificant and culturally blurred period usually ascribed to the so-called 'East Danish Single Grave culture'. However, this paper argues for a renewed and balanced understanding of the cultural conditions in East Denmark and questions the presence of the Single Grave culture in the area. Instead, it is argued that new material elements were obtained and fitted into existing Funnel Beaker traditions forming a heterogeneous cultural expression.

INTRODUCTION

The first half of the 3rd millennium BC in South Scandinavia was characterised by four archaeologically-defined culture groups: The late Funnel Beaker culture, the coastal hunter-fisher-gatherer-inspired Pitted Ware culture, the Jutland Single Grave culture and the Swedish Battle Axe culture. Whereas the latter two belonged to the group of Corded Ware societies that spread across most parts of Northern Europe in the early 3rd millennium BC, the Pitted Ware culture was somehow related to a larger complex of sub-Neolithic forager cultures found in Northeastern Europe. In South Scandinavia, Pitted Ware sites date between ca. 2900–2400 BC (Iversen 2010).

In comparison, the late Funnel Beaker culture (the St. Valby phase) was the final stage within a long tradition that began with the introduction of an agrarian economy in South Scandinavia around 4000 BC. The Funnel Beaker period is usually believed to have come to an end around 2800 BC, when Single Grave communities introduced individual interments in small burial mounds, cord-decorated beakers and new types of stone battle axes to the Jutland Peninsula. However, some radiocarbon dates show that the late Funnel Beaker phase continued for quite some time in the easternmost parts of Jutland and on the Danish Islands (cf. Andersen 2008, 39; Skousen 2008, 207–219; Iversen in press, ch. 3).

As the Funnel Beaker culture ceased, East Denmark (**Fig. 1**) displayed an insignificant and culturally blurred development, characterised by a mixture of continued Funnel Beaker traditions and Single Grave, Battle Axe and Pitted Ware culture elements. The material culture dated to this period (ca. 2600–2350 BC, the final Middle Neolithic) has, from early on, been defined by C.J. Becker (1936) as the 'East Danish Single Grave culture'. However, the question to be posed here inquires whether a Single Grave culture ever really existed in East Denmark? Answering this question includes a reconsideration of the material culture, the burial custom, the settlement pattern and finally the subsistence economic practice.

Fig. 1. South Scandinavia and northernmost Germany, with the names of islands, regions and bodies of water mentioned in the texts. East Denmark is defined here as the islands of Zealand, Møn, Falster and Lolland, as Bornholm was to a great extent associated with Scania in Neolithic times (geographical map: The research programme 'Settlement and Landscape').

MATERIAL CULTURE CHANGES

The final Funnel Beaker phase of the early 3rd millennium BC is characterised by the St. Valby pottery style and the use of thick-butted flint axes. St. Valby pottery is clearly distinguished from the earlier, and far more elegant and elaborate, Funnel Beaker styles by its plain bucket-shaped forms, the thick and coarsely-tempered ware, and scarce and simple ornamentation (**Fig. 2**). Even though the crude St. Valby pottery might have adequately served a purpose as storage/cooking vessels, it definitely represents a break with the classical Funnel Beaker pottery tradition. Artistically, we are dealing with a degeneration phase, which in my view mirrors a general transformation phase within the late Funnel Beaker societies, characterised by a gradual incorporation of various new material elements. The occurrence of St. Valby pottery is, in itself, an indication of this development as it shares certain vessel shapes and stylistic elements with, for example, the pottery of the western Globular Amphora group (cf. Davidsen 1978, 174–175).

Roughly at the same time as the St. Valby pottery style developed, Pitted Ware artefacts appeared in Southern Scandinavia. In East Denmark, these traces mainly consist of stray

finds of tanged flint arrowheads (Becker's types A–C) and bipolar cylindrical blade cores, the latter being the residual product resulting from the preparation of long, slender and straight blades needed for the production of tanged arrowheads. Only a few finds of Pitted Ware pottery have been recorded in East Denmark, which is partly due to the scarce number of proper settlement sites containing occupation features such as pits, postholes or cultural layers. However, tanged arrowheads occur frequently in megalithic tombs, with up to 50 or more arrowheads per tomb.

The overall impression gained from the East Danish Pitted Ware traces is that they represent the adaptation of new artefact types, and probably also an increased focus on hunting strategies by the indigenous Funnel Beaker communities rather than, for example, migrating people or the replacement of culture by other means (Iversen 2010).

From ca. 2600 BC, a further introduction of a new series of artefacts took place. At this point in time, the Funnel Beaker culture had ceased and various Corded Ware (Single Grave/Battle Axe culture) elements appeared in East Denmark. These are first and foremost thick-butted flint adzes, type D arrowheads, beakers and stone battle axes (Iversen in press).

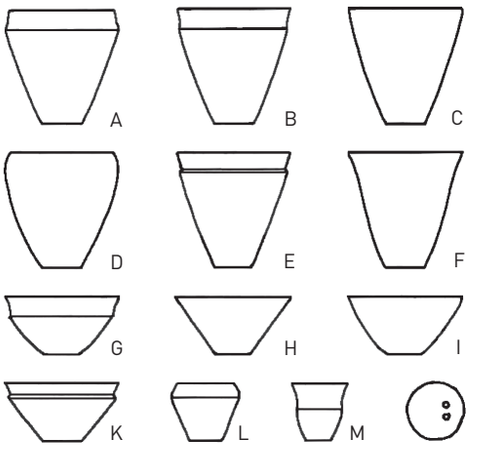

Fig. 2. Late Funnel Beaker pottery types. Large bucket-shaped food/storage vessels (A–F) and bowls (G–K) are dominant. Additional forms include bi-conical vessels (L), funnel-necked beakers (M) and clay discs (schematic drawings, scale not specified; Davidsen 1978 fig. 50).

FLINT ADZES

In continuation of the flint axe tradition, thick-butted adzes appeared in large numbers in East Denmark, probably from around or a little before 2600 BC (**Fig. 3**). Adzes are mainly recorded as stray finds and appear in megalithic tombs and hoards. In Sweden, flint adzes are known from the entire Battle Axe period (ca. 2800/2700–2300/2200 BC) and are common in single graves, in particular in Scania. In Denmark, the type is known from relatively few single graves in Eastern Jutland dating from the later Ground Grave period, i.e. ca. 2500 BC (Glob 1945 fig. 90; Malmer 2002, 151–152; Hübner 2005, 352–353, 370). Thus, it seems as though the occurrence of thick-butted flint adzes in East Denmark was caused by South Swedish Battle Axe culture influences and that these influences reached the eastern parts of Jutland.

TANGED ARROWHEADS

The late tanged arrowheads (type D) constitute another artefact type that occurred in East Denmark and in some Jutland single graves at about the same time as the thick-butted flint adzes (**Fig. 4**). Chronologically as well as typologically, the D-points derive from the Pitted Ware points (types A–C, **Fig. 5**) but they are technically poorer and generally shorter than the Pitted Ware points, in particular when compared with the long and chipped type C, with which they share great similarities. Resembling the distribution of the Pitted Ware arrowheads, the D-points are mainly distributed in the northeastern parts of Denmark and occur in the Jutland single graves from ca. 2500 BC onwards. In East Denmark, D-points are mainly known from stray finds and megalithic tombs but they are not common, for example, in the Swedish Battle Axe culture graves (Malmer 2002, 161; Hübner 2005, 424–427, 438–439). The use of D-points clearly shows the incorporation and continuation of the Pit-

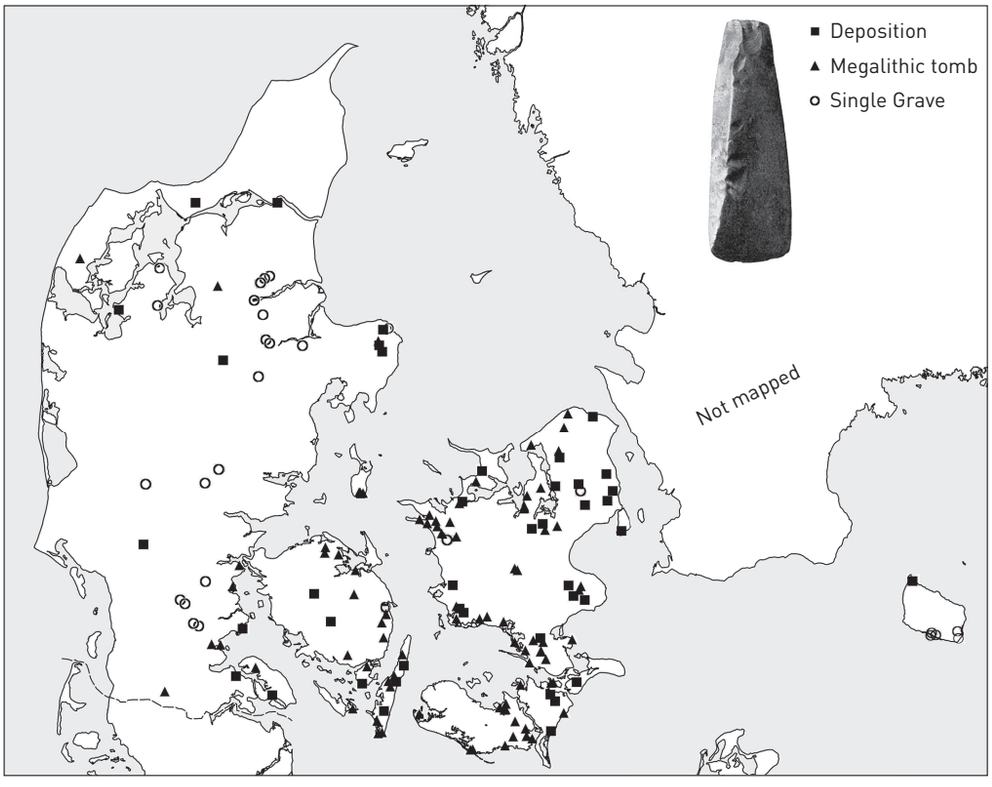

Fig. 3. Distribution of thick-butted flint-adzes from hoard depositions, megalithic tombs and single graves.

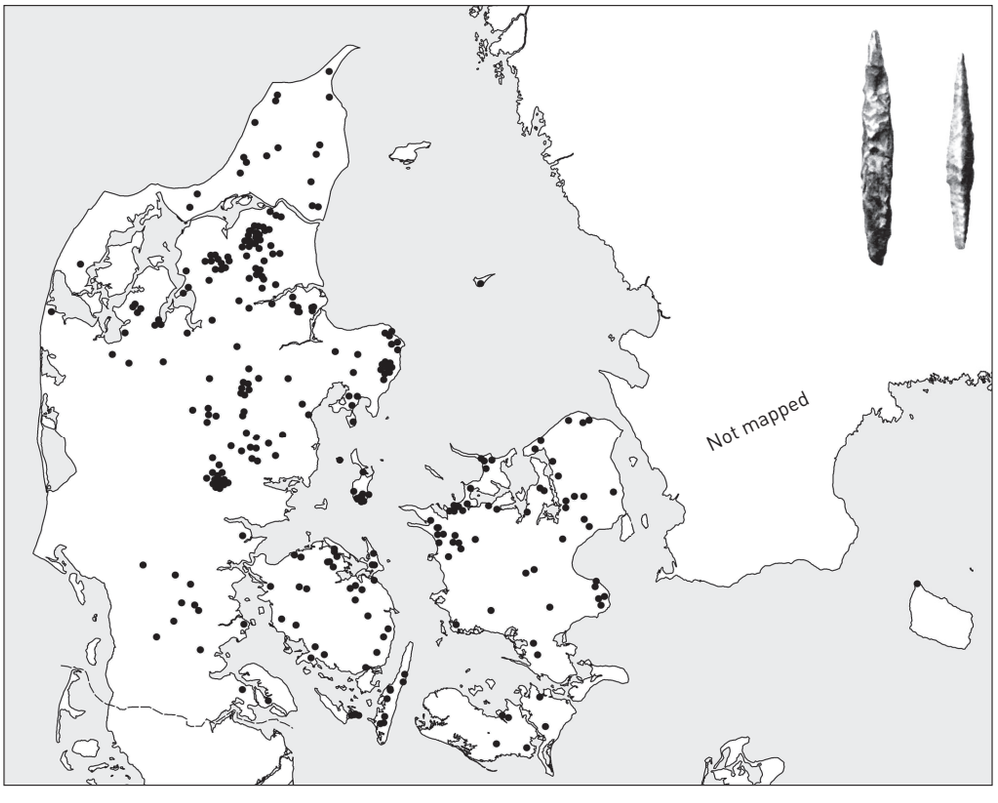

Fig. 4. Distribution of tanged arrowheads, type D.

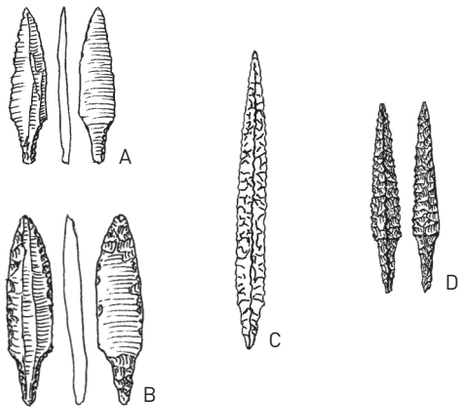

Fig. 5. Neolithic tanged arrowhead types (scale not specified; after Ebbesen 2006 fig. 13).

ted Ware arrowhead tradition on the Danish Islands and in Northeastern Jutland. These are more or less the same areas where the thick-butted flint adzes are also found, located clearly outside the Single Grave core area of West-Central Jutland.

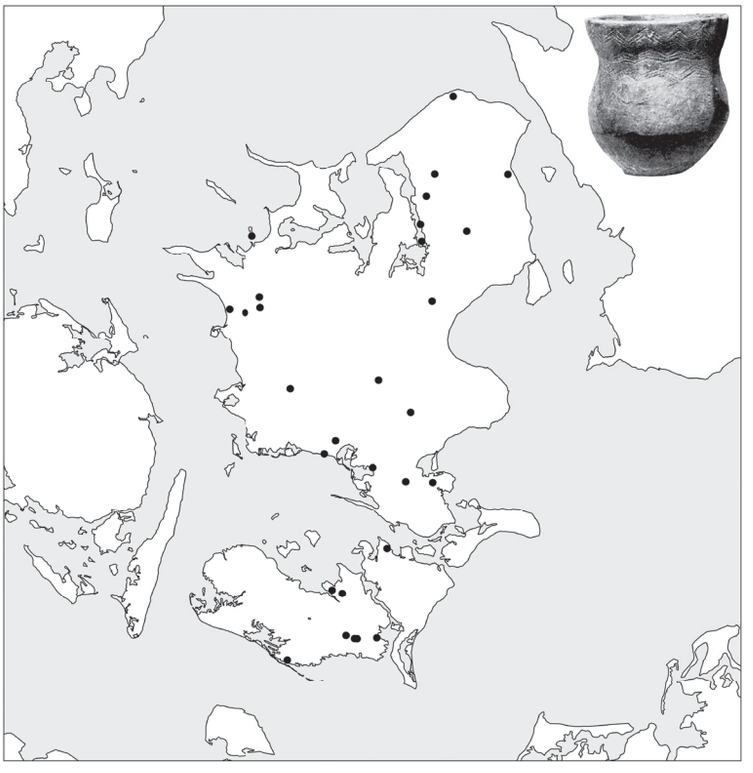

Fig. 6. Distribution of Corded Ware beakers in East Denmark.

BEAKERS

It was not only the flint inventory that changed as the late Funnel Beaker culture ceased in East Denmark, but also the pottery tradition. From around ca. 2600 BC onwards, we see the occurrence of relatively few, but distinct, Single Grave type beakers (**Fig. 6**). Of the ca. 700 Danish Corded Ware beakers recorded by P.V. Glob in 1945, only about 4 % derive from East Denmark. Even though new finds have been recovered since Glob's recordings, these have not changed the overall distribution; on the contrary, new finds have mainly been excavated within the Jutland Single Grave area (cf. Glob 1945, 64–122; Sørensen 2000; Thomsen 2002; Hübner 2005, 166–169; Ebbesen 2006, find lists 1, 5 and 7).

The East Danish pottery is mainly comprised of curved beakers of Glob's type C and D, including large coarse and undecorated vessels as well as the characteristic so-called 'double-bellied beakers', which are mainly found on Funen. The ornamentation consists of herringbone patterns, horizontal lines, broad zigzag or undulating bands often made with a comb or toothed stick. Horizontal grouping of the decoration in belts or zones is frequent (Becker 1936, 172–178; Glob 1945, 64–122; Ebbesen 2006, 61–78).

The beakers found on the Danish Islands can be compared to those of Southeastern Jutland, Eastern Schleswig-Holstein, Mecklenburg-Western Pomerania and the lower Oder rather than those of the Jutland Single Grave core area of West-Central Jutland. In the former areas, the focus was on S-profiled curved beakers, whereas straight-walled beakers represent a particular development within the latter area (Struve 1955, 41–44; Nilius 1981, 64; Ebbesen 2006 figs. 34–40, 44–47; Matuszewska 2010, 254, 264–265 figs. 3–4). In this context, it is noteworthy that no straight-walled beakers have been found in East Denmark. In contrast, the characteristic straight-walled beakers account for more than half of the funerary pottery on the Jutland Peninsula (Hübner 2005, 228–229). Likewise, no Swedish Battle Axe culture beakers are known from Denmark, showing that, when it comes to pottery, some very well-defined borders were sustained that demarcated the Danish Islands

Fig. 7. Distribution of Single Grave type stone battle axes in East Denmark.

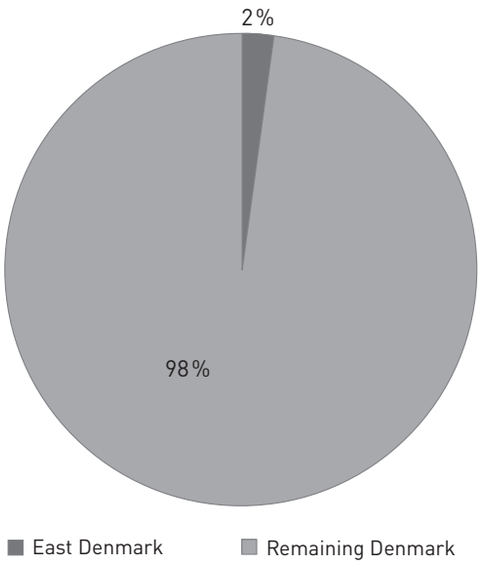

Fig. 8. Percentage of Single Grave type battle axes found in East Denmark. Total number: 2373 axes (data from Glob 1945).

from both the Jutland Single Grave culture and the Swedish Battle Axe culture.

BATTLE AXES

Stone battle axes are well-known from the Funnel Beaker culture in the forms of polygonal and double-edged axes. But with the occurrence of the Single Grave culture on the Jutland Peninsula, new battle axe types were introduced in large numbers. However, the predominant use of these new axe types was far from widespread in East Denmark. Of the ca. 2400 axes recorded by Glob (1945, 15, 17–51), only a small percentage derives from East Denmark (**Figs. 7** and **8**). Thus, the East Danish region displays a remarkably low share; had the axes been distributed equally across present day Denmark, ca. 20 %, or about 500 axes, could be expected for East Denmark. Even though the number of axes has increased since Glob's (1945) recordings, there is no reason to believe that the percentage distribution has changed. In East Denmark, battle axes mainly occur as stray finds, but they are also found as single depositions in wetlands and in megalithic tombs. This finds situation is very unlike that of the Jutland Peninsula, where battle axes have been found in more than 1100 single graves (Hübner 2005, 605).

An uneven distribution is not only visible when it comes to the number of axes but it also applies to the different types. The East Danish axes mainly date from the Ground and Upper Grave periods, i.e. from ca. 2600 BC onwards (**Fig. 9**). Type K axes are predominant, in particular subtype K_1 (Iversen in press, ch. 4). Whereas K_1 axes are rare within the Jutland Single Grave area, the type is well-known in the West Baltic area, with concentrations in Southeastern Jutland, the eastern part of Schleswig-Holstein, Funen and the south Funen archipelago. Additionally, K_1-axes occur throughout Mecklenburg-Western Pomerania and a significant concentration is found on the west side of the Oder estuary (Jacobs 1991, 29 map 4; Ebbesen 2006, 50 fig. 18). Battle axes from the Swedish Battle Axe culture, often termed 'boat axes', are generally rare in Denmark, but even if they are few in numbers, they comprise a considerable share (ca. 15 %) of the East Danish battle axes.

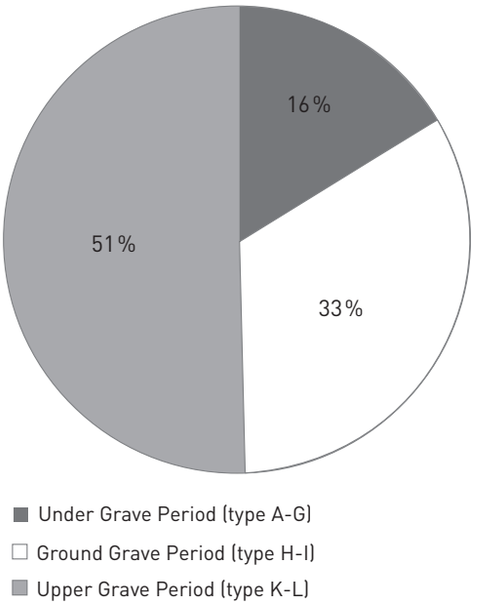

Fig. 9. Percentage distribution of Single Grave type battle axes found in East Denmark. Total number: 79 axes. Under Grave period: ca. 2850–2600 BC, Ground Grave period: ca. 2600–2450 BC, Upper Grave period: ca. 2450–2250 BC.

BURIAL PRACTICE

When considering burial customs, the final Middle Neolithic societies in East Denmark can be differentiated from the rest of South Scandinavia. Compared with the more than 1500 recorded Single Grave sites on the Jutland Peninsula, amounting close to 2400 interments (Hübner 2005, 12–18, 60 fig. 2), the handful of known sites from East Denmark seems negligible. The few recorded graves are almost all stone cists and may be local variations of the Single Grave burial custom, which is otherwise characterised by low burial mounds with interments of single east-west orientated, crouched individuals buried with cord-decorated beakers, stone battle axes and amber ornaments. Instead of single graves, megalithic tombs were continuously reused throughout the Middle Neolithic in East Denmark (**Fig. 10**).

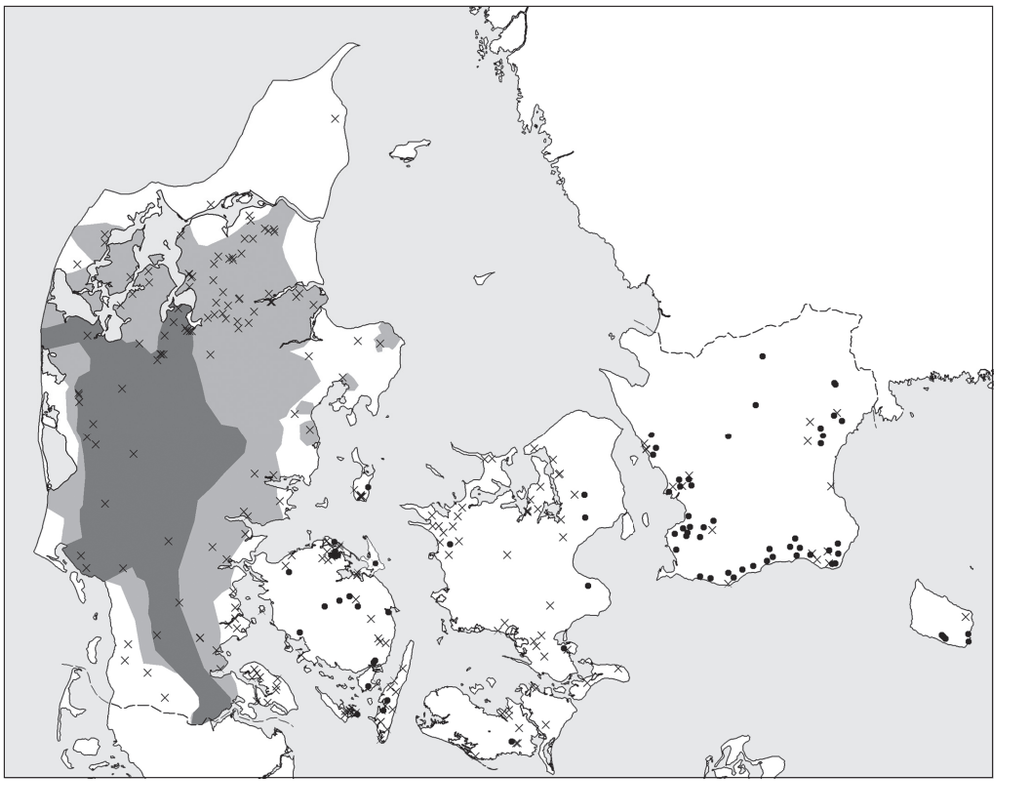

Fig. 10. Single Grave and Battle Axe culture graves in Denmark and Scania (dots). Grey colouring: Distribution of Jutland Single Graves. Dark grey: Initial phase ca. 2850–2800 BC. Cross: Megalithic tombs with Single Grave/Battle Axe culture finds (Iversen 2013 fig. 3).

CONTACTS

During the first two thirds of the 3rd millennium BC, East Denmark took part in manifold contact networks, probably operating on several levels within the society. Networks included Pitted Ware connections stretching to Southern Norway and Western, Southern and Eastern Sweden. At the same time, different late Funnel Beaker pottery groups can be distinguished such as the continued St. Valby group on the Danish Islands and easternmost Jutland, the Vasagård/Grødbygård group on Bornholm and the Kärlsfelt/Stävie group in Scania (cf. Nielsen/Nielsen 1991; Larsson 2006, 72–78)

After the cessation of the Funnel Beaker culture around 2600 BC, the overall impression gained from the material culture from East Denmark is that it is not easily comparable with that of either Jutland or Scania. A limited number of battle axes were exchanged with the Battle Axe culture, but neither pottery nor potters seem to have crossed the Oresund. Conversely, the easterly distribution of thick-butted adzes shows close contacts between the Danish Islands and Scania during the final Middle Neolithic. If pottery production was a woman's job, and flint and battle axe manufacturing was a man's job, then these differences can be explained by men conducting the exchange of goods without involving closer cultural or intermarriage contacts.

As regards Single Grave culture influences, the Kattegat and the Great Belt formed a cultural barrier since Funen was affected by the Jutland Single Grave culture to a much higher degree than East Denmark. The main use of megalithic tombs as burial chambers, S-profiled beakers and type K_1 battle axes were, on the other hand, elements that East Denmark shared with the North German Baltic Sea region.

A FRAGMENTARY SETTLEMENT PATTERN

It was not only the material culture that changed during the early 3rd millennium BC; profound changes also occurred in the settlement pattern and the subsistence economy. Within a late Funnel Beaker setting, settlements seem to have come together, grown in size and expanded their resource areas. This development was presumably triggered by the establishment of large causewayed enclosures (Sarup type) at the transition from the Early to the Middle Neolithic, around 3300 BC (Nielsen 2004). However, this development might not apply generally as regional differences in settlement size occur within the late Funnel Beaker culture (Klassen 2014, 14). Furthermore, large ritual gathering sites in the form of palisaded enclosures were built during the final Funnel Beaker/early Battle Axe phase on Zealand, Bornholm and in Scania ca. 3000–2500 BC (Brink et al. 2009).

Cattle were the dominant domesticated species already from the earliest Neolithic and continued as such throughout the Funnel Beaker period (Klassen 2014, 153). Pollen analyses show that the landscape was opened and was thus characterised by coppice and hazel copses, perhaps including permanent fields and commons. In Eastern Denmark, the lime forest reoccurred during the Late Middle Neolithic, showing that some agricultural areas were abandoned. The low frequency of human impact that can be recognised in the pollen diagrams around ca. 2800–2600 corresponds with the end of the Funnel Beaker period. Thus, it is reasonable to consider an economic reorganisation in which forest resources played an increasing role in the form of leaf-foddering, for example (Andersen 1978, 23; 1991; Rasmussen et al. 2002; Rasmussen 2005).

However, it is uncertain whether the regeneration of woodlands was due to the concentration of settlements or the return of dispersed and mobile habitation patterns and perhaps even a population decrease (cf. Dörfler 2008; Hinz et al. 2012, 3337). Nevertheless, settlement features like pits, cultural layers and house constructions diminish from ca. 2600 BC at the latest on the Danish Islands, indicating a new settlement organisation and altered subsistence economic strategies.

A picture very similar to that of Eastern Denmark, characterised by wood regeneration, can also be observed in the eastern parts of Schleswig-Holstein and western Mecklen-

burg-Western Pomerania. In Northern Germany, this development also took place from ca. 2800–2600 BC and again from 2300–2100 BC, and human impact on the landscape generally decreased during the 3rd millennium BC in comparison with the 4th millennium BC (Dörfler 2008).

SINGLE GRAVE AND PITTED WARE STRATEGIES

The transition from the Funnel Beaker to a Corded Ware settlement pattern can best be followed on Bornholm and in Scania, as house structures are known from both periods. However, the general lack of settlements that can be seen in East Denmark also applies to Bornholm, even though this development set in a little later (ca. 2500 BC). In Scania, dispersed single farms seem to constitute the backbone of society after the palisaded enclosures lost their significance as communal gathering sites. A similar dispersed settlement pattern can be seen in many parts of Corded Ware Europe, including Central and Western Jutland, where Single Grave communities occupied the former scarcely exploited sandy soils. Lightly built single houses bear witness to a settlement pattern focused on individual farmsteads relying on pastoral farming that to some extent included grain growing – probably a system of mixed farming (Nielsen 1999, 154–156; Andreasen 2009; Müller et al. 2009, 135–140; Berggren/Brink 2010, 255–258).

The emergence of Single Grave communities in Central and Western Jutland caused woodland and brushwood clearances; hazel diminished and plantain, grasses and herbs became frequent. As a result, heath spread and was deliberately maintained by regular burning as heathland was probably used for pastures. This deforestation was a radical change in the Funnel Beaker landscape based on brushwood or coppice management and might well have been the result of an increased need for pastures in an intensive land use system relying on pastoral farming and agriculture (Odgaard/Rostholm 1988; Andersen 1993, 1998).

Contemporary with the late Funnel Beaker and early Single Grave use of farming and cattle breeding strategies, the coastal Pitted Ware sites of Northeastern Denmark and Scania display a mixed economy relying on hunting, fishing and gathering, probably supplemented with herding and farming (Iversen 2010, 14–15 with references). Thus, from ca. 2800–2600 BC we are dealing with three distinct eco-zones and land use strategies within Denmark that correspond with three different material culture expressions: the prolonged Funnel Beaker culture on the Danish Islands, the Pitted Ware culture occupying the northeast Danish coastlines and the Single Grave culture on the sandy soils of West-Central Jutland.

The overall picture of the early 3rd millennium BC is one of variety in the exploitation of resources and a great ability to adapt to local conditions. With the emergence of Corded Ware societies in South Scandinavia, a dispersed settlement pattern, otherwise known from the Early Neolithic, replaced the larger and finds-rich settlements of the late Funnel Beaker culture. This process can, with some precautions, be described as one of 'de-neolithisation' (Iversen 2013). Neolithic life changed and large permanent settlements and agriculture were downgraded in favour of more mobile subsistence strategies and scattered habitations, occasionally with lightly built houses. The 'de-neolithisation' is most clearly demonstrated by the occurrence of Pitted Ware sites and the revival of hunting and fishing strategies, but also to some extent by the presumed mixed farming of the Single Grave culture and the general lack of habitation features in East Denmark.

WAS THERE EVER A SINGLE GRAVE CULTURE IN EAST DENMARK?

As it appears from the analysis above, the situation in East Denmark during the 3rd millennium BC is culturally rather complex. The continued use of megalithic entombments and the almost total rejection of the Single Grave burial custom show a strong affiliation with

old Funnel Beaker traditions even after the end of the Funnel Beaker culture. This is also shown by the continued focus on flint axes/adzes instead of battle axes that were otherwise used in very large numbers within the Jutland Single Grave communities. However, the adoption of thick-butted flint adzes was probably influenced by the Swedish Battle Axe culture, whereas Pitted Ware influences are visible in the continued use of tanged arrowheads and probably also in the scattered settlement pattern.

When it comes to settlement organisation, the Funnel Beaker lifestyle did not seem to have been carried on. The actual subsistence economic strategy in East Denmark is hard to detect from the few and scattered habitation sites, but we might be dealing with some kind of 'de-neolithisation' process as stated above. By all means, we must assume a continuation of some kind of moderated Pitted Ware lifestyle, which likely included lightly built houses and the use of foraging strategies in combination with mixed farming. Fragmentation of the settlement pattern and the exploitation of niche economies seem to form the most likely scenario during the final Middle Neolithic in East Denmark.

With an almost total lack of the two defining elements of the Single Grave culture – interments in single graves and the prominent position of stone battle axes – one can hardly talk about a Single Grave culture in East Denmark. What we see is rather the adoption of various Single Grave, Battle Axe and Pitted Ware cultural traits into a setting that was basically a continuation of Funnel Beaker norms and traditions (Iversen 2015).

The reason why East Denmark so conservatively upheld the Funnel Beaker traditions must be found in the area's old position as a 'megalithic heartland', which reaches back to the early 4th millennium BC when dolmens and passage graves were constructed in very large numbers. However, as the Funnel Beaker complex ceased and new Corded Ware customs gained a foothold in Northern Europe during the early 3rd millennium BC, new material elements, such as Single Grave type battle axes and profiled cord ornamented beakers, were adopted in East Denmark. Even though the artefact types changed, the usage and the social contexts, in which these objects were embedded, remained Funnel Beaker and the communal megalithic tombs were preferred over individual single graves. The result was a cultural blend governed by old Funnel Beaker norms and the use of Pitted Ware, Single Grave and Battle Axe material culture. This situation continued until the beginning of the Late Neolithic (ca. 2350 BC) when cultural and social development took a new course and flint daggers and metal objects appeared/re-appeared in South Scandinavia.

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